University of Tripoli/faculty of engineering
Electrical & Electronic Eng. Dept.

Course: EE334   FIRST EXAM   SPRING 2013

Q-1) a : Describe the operation that 8086 will perform when it execute each of the instructions :

  1- MOV BX, 03FFh   2- MOv AL ,0DBh   3- MOv DH ,CL   4- MOV BX ,AX

  b: Write the 8086 assembly language statement which will perform the following operation

   1 – load the number 7986H into the BP register   2- copy BP register contents to the SP register

    3- copy the content of AX register to the DS register   4- load the number F3H into AL register

  C: if the data segment register (DS) contains 4000H , what physical address will instruction

     MOV AL ,[234BH] read ?

  D : If the code segment for an 8086 program start at address 70400H, what number will be in the CS register?

  E:Write an ALP to find out decimal addition of sixteen four digit decimal numbers

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Q-2) a: How many address line does an 8086 have ?

   b: how many memory addresses does this number of address lines allow 8086 to access directly ?

   C: at any given time , the 8086 works with four segment in this address space. How many byte are contained in each segment?

  D:what is the main differences between the 8086 and 8088 ?

  E: Describe the function of the 8086 Queue? And does the queue speed up processing?

  F: Write an ALP to convert a given sixteen bit binary number to its GRAY equivalent?

  G: Use stack map to show the effect of each of the following instruction on the stack pointer and the content of the stack

```
     MOV SP , 5000H
     PUSH SP
     CALL delay
     POP AX
     ……….
     ………
     ………
     ………………..
```

```
Delay proc near
  PUSHF       ; push a 16bit flag register
  PUSH BX
  .

  .
  pop BX
  popf         ;  POP a 16bit to flag register
  ret
  delay endP
```

===

Q-3) a : given the following data structure

```
     XXXX  segment
        old      DB    'Libya is free'
        new     DB    13 DUP (0)
     XXXX     ends
```

    write program which moves the string "Libya is free" from **old** to **new** which just above the initial location?

  b: Describe the function of each assembler directive and instruction statement in the program below

```
          ; pressure read program
       DATA_HERE  SEGMENT
          PRESSURE DB  0                    ; STORAGE FOR PRESSURE
          PRESSURE_PORT       EQU   04H
          CORRECTION _FACTOR  EQU   07H
       DATA_HERE  ENDS
     CODE _HERE  SEGMENT
         ASSUME  CS:CODE_HERE ,DS:DATA_HERE
            MOV AX , DATA_HERE
            MOV DS ,AX
            IN  AL , PRESSURE_PORT
            ADD AL  CORRECTION _FACTOR
```

```
     MOV PRESSURE  ,AL
   CODE_HERE ENDS
    END
```

==

Q-4) A : write a procedure which produces a delay of 3.33ms when run on 8086 with 5MHz clock ?

   B : write a mainline program which uses this procedure to output a square wave on bit D0 of port FFFAH?

   C: What are the contents of the data bus and the status of Ao and BHE when the following instructions are executed in 8086?

   1- CPU writes a byte 11H at memory location 1000H :0002H.

   2- CPU writes a word 2211H at memory location 1000H : 0003H.

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